

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404

Tel: (912)354-7858

TestAmerica Job ID: 680-115501-2

Client Project/Site: Gold King Mine - Region 8

For:

Weston Solutions, Inc.

1435 Garrison Street

Suite 100

Lakewood, Colorado 80215

Attn: Moira Pryhoda

Sheila Hoffman

Authorized for release by:

8/13/2015 5:54:24 PM

Sheila Hoffman, Project Manager II

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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

## Method Summary

Client: Weston Solutions, Inc.

Project/Site: Gold King Mine - Region 8

TestAmerica Job ID: 680-115501-2

Method	Method Description	Protocol	Laboratory
2540C-2011	Total Dissolved Solids (Dried at 180 °C)	SM	TAL SAV

**Protocol References:**

SM = "Standard Methods For The Examination Of Water And Wastewater",

**Laboratory References:**

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TestAmerica Savannah

## Sample Summary

Client: Weston Solutions, Inc.

Project/Site: Gold King Mine - Region 8

TestAmerica Job ID: 680-115501-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-115501-1	A68_081015	Water	08/10/15 16:15	08/12/15 09:46
680-115501-2	A72_081015	Water	08/10/15 17:00	08/12/15 09:46
680-115501-3	CC48_081015	Water	08/10/15 15:50	08/12/15 09:46
680-115501-4	GKMSW09_081015	Water	08/10/15 10:45	08/12/15 09:46

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# Definitions/Glossary

Client: Weston Solutions, Inc.  
Project/Site: Gold King Mine - Region 8

TestAmerica Job ID: 680-115501-2

## Qualifiers

### General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

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## Case Narrative

Client: Weston Solutions, Inc.  
Project/Site: Gold King Mine - Region 8

TestAmerica Job ID: 680-115501-2

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**Job ID: 680-115501-2**

Laboratory: TestAmerica Savannah

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Narrative

### CASE NARRATIVE

**Client: Weston Solutions, Inc.**

**Project: Gold King Mine - Region 8**

**Report Number: 680-115501-2**

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

#### **RECEIPT**

The samples were received on 08/12/2015; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 4.6° C and 5.8° C.

#### **TOTAL DISSOLVED SOLIDS**

Samples A68\_081015 (680-115501-1), A72\_081015 (680-115501-2), CC48\_081015 (680-115501-3) and GKMSW09\_081015 (680-115501-4) were analyzed for total dissolved solids in accordance with SM 2540C. The samples were analyzed on 08/12/2015.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Client Sample Results

Client: Weston Solutions, Inc.  
Project/Site: Gold King Mine - Region 8

TestAmerica Job ID: 680-115501-2

**Client Sample ID: A68\_081015**

Date Collected: 08/10/15 16:15

Date Received: 08/12/15 09:46

**Lab Sample ID: 680-115501-1**

Matrix: Water

## General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	160		10	10	mg/L			08/12/15 16:59	1

**Client Sample ID: A72\_081015**

Date Collected: 08/10/15 17:00

Date Received: 08/12/15 09:46

**Lab Sample ID: 680-115501-2**

Matrix: Water

## General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	240		10	10	mg/L			08/12/15 16:59	1

**Client Sample ID: CC48\_081015**

Date Collected: 08/10/15 15:50

Date Received: 08/12/15 09:46

**Lab Sample ID: 680-115501-3**

Matrix: Water

## General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	840		10	10	mg/L			08/12/15 16:59	1

**Client Sample ID: GKMSW09\_081015**

Date Collected: 08/10/15 10:45

Date Received: 08/12/15 09:46

**Lab Sample ID: 680-115501-4**

Matrix: Water

## General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2600		10	10	mg/L			08/12/15 16:59	1

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# QC Sample Results

Client: Weston Solutions, Inc.

Project/Site: Gold King Mine - Region 8

TestAmerica Job ID: 680-115501-2

## Method: 2540C-2011 - Total Dissolved Solids (Dried at 180 °C)

Lab Sample ID: MB 680-395795/1

Matrix: Water

Analysis Batch: 395795

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier									
Total Dissolved Solids	5.0	U			5.0		mg/L			08/12/15 16:59	1

Lab Sample ID: LCS 680-395795/2

Matrix: Water

Analysis Batch: 395795

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike	LCS	LCS	Result	Qualifier	Unit	D	%Rec	%Rec.	Limits	
	Added	Result	Qualifier								
Total Dissolved Solids	59.0		67.0			mg/L		114	80 - 120		

Lab Sample ID: LCSD 680-395795/3

Matrix: Water

Analysis Batch: 395795

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike	LCSD	LCSD	Result	Qualifier	Unit	D	%Rec	%Rec.	Limits	RPD
	Added	Result	Qualifier								
Total Dissolved Solids	59.0		65.0			mg/L		110	80 - 120	3	25

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# QC Association Summary

Client: Weston Solutions, Inc.

Project/Site: Gold King Mine - Region 8

TestAmerica Job ID: 680-115501-2

## General Chemistry

Analysis Batch: 395795

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115501-1	A68_081015	Total/NA	Water	2540C-2011	
680-115501-2	A72_081015	Total/NA	Water	2540C-2011	
680-115501-3	CC48_081015	Total/NA	Water	2540C-2011	
680-115501-4	GKMSW09_081015	Total/NA	Water	2540C-2011	
LCS 680-395795/2	Lab Control Sample	Total/NA	Water	2540C-2011	
LCSD 680-395795/3	Lab Control Sample Dup	Total/NA	Water	2540C-2011	
MB 680-395795/1	Method Blank	Total/NA	Water	2540C-2011	

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# Lab Chronicle

Client: Weston Solutions, Inc.  
Project/Site: Gold King Mine - Region 8

TestAmerica Job ID: 680-115501-2

**Client Sample ID: A68\_081015**

Date Collected: 08/10/15 16:15

Date Received: 08/12/15 09:46

**Lab Sample ID: 680-115501-1**

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540C-2011		1	50 mL	100 mL	395795	08/12/15 16:59	JER	TAL SAV

**Client Sample ID: A72\_081015**

Date Collected: 08/10/15 17:00

Date Received: 08/12/15 09:46

**Lab Sample ID: 680-115501-2**

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540C-2011		1	50 mL	100 mL	395795	08/12/15 16:59	JER	TAL SAV

**Client Sample ID: CC48\_081015**

Date Collected: 08/10/15 15:50

Date Received: 08/12/15 09:46

**Lab Sample ID: 680-115501-3**

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540C-2011		1	50 mL	100 mL	395795	08/12/15 16:59	JER	TAL SAV

**Client Sample ID: GKMSW09\_081015**

Date Collected: 08/10/15 10:45

Date Received: 08/12/15 09:46

**Lab Sample ID: 680-115501-4**

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540C-2011		1	50 mL	100 mL	395795	08/12/15 16:59	JER	TAL SAV

## Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

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Page 1 of 3

USEPA

Date Shipped: 8/11/2015

Carrier Name: FedEx

Airbill No:

## CHAIN OF CUSTODY RECORD

No: 8-081015-184734-0002

Cooler #:

Lab: TestAmerica Laboratories, Inc -  
Savannah, GA

Lab Phone: 912-354-7858

Lab #	Sample #	Location	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservativ e	Lab QC
	A68_081015	A68	Suspended Solids (TSS) and Alkalinity	Surface Water	8/10/2015	16:15	1	250 ml Plastic Jar	4 C	N
	A68_081015	A68	Total Recoverable Metals & Mercury	Surface Water	8/10/2015	16:15	1	250 ml Plastic Jar	HNO3 pH<2	N
	A68_081015	A68	Total Dissolved Solids/ Dissolved Metals & Mercury	Surface Water	8/10/2015	16:15	1	250 ml Plastic Jar	4 C	N
	A72_081015	A72	Suspended Solids (TSS) and Alkalinity	Surface Water	8/10/2015	17:00	1	250 ml Plastic Jar	4 C	N
	A72_081015	A72	Total Recoverable Metals & Mercury	Surface Water	8/10/2015	17:00	1	250 ml Plastic Jar	HNO3 pH<2	N
	A72_081015	A72	Total Dissolved Solids/ Dissolved Metals & Mercury	Surface Water	8/10/2015	17:00	1	250 ml Plastic Jar	4 C	N
	CC48_081015	CC48	Suspended Solids (TSS) and Alkalinity	Surface Water	8/10/2015	15:50	1	250 ml Plastic Jar	4 C	N
	CC48_081015	CC48	Total Recoverable Metals & Mercury	Surface Water	8/10/2015	15:50	1	250 ml Plastic Jar	HNO3 pH<2	N
	CC48_081015	CC48	Total Dissolved Solids/ Dissolved Metals & Mercury	Surface Water	8/10/2015	15:50	1	250 ml Plastic Jar	4 C	N
	GKMSW09_081015	GKM09	Suspended Solids (TSS) and Alkalinity	Surface Water	8/10/2015	10:45	1	250 ml Plastic Jar	4 C	N

Special Instructions: Scribe compatible EDD, Dissolved bottles field filtered	SAMPLES TRANSFERRED FROM	
	CHAIN OF CUSTODY #	

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	B. W. Weston	8/11 1600	John W. Weston	8/12/15 7A 9:46	4.2 4.6
					5.4 5.8



680-115501 Chain of Custody

Page 2 of 3

USEPA

Date Shipped: 8/11/2015

Carrier Name: FedEx

Airbill No:

## CHAIN OF CUSTODY RECORD

No: 8-081015-184734-0002

Cooler #:

Lab: TestAmerica Laboratories, Inc -  
Savannah, GA

Lab Phone: 912-354-7858

Lab #	Sample #	Location	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservativ e	Lab QC
	GKMSW09_081015	GKM09	Total Recoverable Metals & Mercury	Surface Water	8/10/2015	10:45	1	250 ml Plastic Jar	HNO3 pH<2	N
	GKMSW09_081015	GKM09	Total Dissolved Solids/ Dissolved Metals & Mercury	Surface Water	8/10/2015	10:45	1	250 ml Plastic Jar	4 C	N
	GKMTW 36_081015	GKMTW36	Total Recoverable Metals	Surface Water	8/10/2015	14:00	1	250 ml Plastic Jar	HNO3 pH<2	N
	GKMTW22_081015	GKMTW22	Total Recoverable Metals	Potable Water	8/10/2015	09:29	1	250 ml Plastic Jar	HNO3 pH<2	N
	GKMTW23_081015	GKMTW23	Total Recoverable Metals	Potable Water	8/10/2015	11:40	1	250 ml Plastic Jar	HNO3 pH<2	N
	GKMTW24_081015	GKMTW24	Total Recoverable Metals	Potable Water	8/10/2015	12:15	1	250 ml Plastic Jar	HNO3 pH<2	N
	GKMTW25_081015	GKMTW25	Total Recoverable Metals	Potable Water	8/10/2015	12:44	1	250 ml Plastic Jar	HNO3 pH<2	N
	GKMTW26_081015	GKMTW26	Total Recoverable Metals	Potable Water	8/10/2015	14:40	1	250 ml Plastic Jar	HNO3 pH<2	N
	GKMTW27_081015	GKMTW27	Total Recoverable Metals	Potable Water	8/10/2015	15:20	1	250 ml Plastic Jar	HNO3 pH<2	N
	GKMTW28_081015	GKMTW28	Total Recoverable Metals	Potable Water	8/10/2015	15:56	1	250 ml Plastic Jar	HNO3 pH<2	N

Special Instructions: Scribe compatible EDD, Dissolved bottles field filtered	SAMPLES TRANSFERRED FROM	
	CHAIN OF CUSTODY #	

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	BWJ-P Weston	8/11 1600	8/11/15	8/11/15	TA 9.46
					4.2/4.6
					5.4/5.8
					680 TISSCO

Page 3 of 3

USEPA

Date Shipped: 8/11/2015

Carrier Name: FedEx

Airbill No:

## CHAIN OF CUSTODY RECORD

No: 8-081015-184734-0002

Cooler #:

Lab: TestAmerica Laboratories, Inc -  
Savannah, GA

Lab Phone: 912-354-7858

Lab #	Sample #	Location	Analyses		Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Lab QC
	GKMTW29_081015	GKMTW29	Total Recoverable Metals	Potable Water	8/10/2015	16:53		1	250 ml Plastic Jar	HNO3 pH<2	N
	GKMTW31_081015	GKMTW31	Total Recoverable Metals	Surface Water	8/10/2015	09:30		1	250 ml Plastic Jar	HNO3 pH<2	N
	GKMTW32_081015	GKMTW32	Total Recoverable Metals	Surface Water	8/10/2015	10:00		1	250 ml Plastic Jar	HNO3 pH<2	N
	GKMTW33_081015	GKMTW33	Total Recoverable Metals	Surface Water	8/10/2015	10:30		1	250 ml Plastic Jar	HNO3 pH<2	N
	GKMTW34_081015	GKMTW34	Total Recoverable Metals	Surface Water	8/10/2015	11:15		1	250 ml Plastic Jar	HNO3 pH<2	N
	GKMTW35_081015	GKMTW35	Total Recoverable Metals	Surface Water	8/10/2015	11:30		1	250 ml Plastic Jar	HNO3 pH<2	N
	GKMTW37_081015	GKMTW37	Total Recoverable Metals	Surface Water	8/10/2015	14:00		1	250 ml Plastic Jar	HNO3 pH<2	N
	GKMTW38_081015	GKMTW38	Total Recoverable Metals	Surface Water	8/10/2015	16:00		1	250 ml Plastic Jar	HNO3 pH<2	N
	GKMTW39_081015	GKMTW39	Total Recoverable Metals	Surface Water	8/10/2015	17:00		1	250 ml Plastic Jar	HNO3 pH<2	N
	GKMTW40_081015	GKMTW40	Total Recoverable Metals	Surface Water	8/10/2015	17:30		1	250 ml Plastic Jar	HNO3 pH<2	N

Special Instructions: Scribe compatible EDD, Dissolved bottles field filtered

## SAMPLES TRANSFERRED FROM

## CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	<i>BW-J Weston</i>	8/11 1600	<i>Chad G</i>	8/12/15 7A 9:40	
					4.2 4.6
					5.4 5.8
					680 + 15501

## Login Sample Receipt Checklist

Client: Weston Solutions, Inc.

Job Number: 680-115501-2

**Login Number: 115501**

**List Number: 1**

**Creator: Daughtry, Beth A**

**List Source: TestAmerica Savannah**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	False	Container for TDS/Dissolved Metal & HG were field filtered not properly preserve
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## Certification Summary

Client: Weston Solutions, Inc.

Project/Site: Gold King Mine - Region 8

TestAmerica Job ID: 680-115501-2

### Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Colorado	State Program	8	N/A	12-31-15
New Mexico	State Program	6	N/A	06-30-16

TestAmerica Savannah